

PUB-NO: WO008202955A1

DOCUMENT-IDENTIFIER: WO 8202955 A1

TITLE: IMPROVED DIFFRACTION GRATING SCANNER
CORRECTION OF SCAN CURVATURES----- KWIC -----
■

Abstract Text - FPAR (1):

CHG DATE=19990617 STATUS=0>An improved diffraction grating anamorphic imaging techniques are utilized to correct the curve scan, in the plane of the scan, as well as correction for field curvature to provide improved resolution and increased length of scan. The scanner system may comprise either refractive or reflective elements, cylindrical lenses (13, 15, 36, 38) and reflectors (27, 33, 37, 39) or elliptical cross-section and toroidal reflectors (20) and lenses. In addition, such system will customarily include one or more spherical elements, but at least one cylindrical or toroidal element must be present. The anamorphic imaging correction apparatus can be utilized with various types of scanners, including polygonal and single-mirror scanners, as well as with various types of detectors.

Details Text Image HTML KWIC

109 EP 553729 A1

110 FR 2556484 A1

111 WO 8202955 A1

112 EP 772156 A

Documentation Searched other than Minimum Documentation
to the extent that such Documents are included in the Fields Searched *NOTES CONSIDERED TO BE RELEVANT¹⁴Citation of Document, ¹⁵ with indication, where appropriate, of the relevant passages ¹⁷

P, A, 55-135813, Published 23 October 1980

P, A, 55-157717, Published 08 December 1980

S, A, 4,294,506, Published 13 October 1981

S, A, 3,870,394, Published 11 March 1975

S, A, 3,750,189, Published 31 July 1973

N, IBM Journal of R and D, Vol. 21, No. 5, 1977, U.S.A., J.M. Fleischer et al, "Laser-Optical System of the IBM 3800 Printer," see pages 479-482

S, A, 4,274,703, Published 23 June 1981

Series of cited documents:¹⁸

defining the general state of the art
document but published on or after the international

"P" document published prior to the international
on or after the priority date claimed

DERWENT-ACC-NO: 1994-345882**DERWENT-WEEK:** 199443**COPYRIGHT 1999 DERWENT INFORMATION LTD**

TITLE: High resolution camera having reduced power consumption
corresp.to HDTV standard - has anamorphic lens imaging
light from object, which is supplied through R, G and B
CCDs of which outputs are combined in dichroic prism, and
changes pixel ratio by adjusting anamorphic lens
NoAbstract

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Derwent Accession Number - NRAN (1):
1994-345882

Title - TIX (1):
High resolution camera having reduced power consumption corresp.to HDTV

Details Text Image HTML KWIC

116 US 5414458 A

117 IL 94135 A

118 JP 06268900 A

119 JP 06253242 A

105	JP 61156038 A	
106	JP 60114850 A	
107	JP 60114845 A	
108	EP 748694 A2	

glass plate 62. The laser diode assembly produces an optically fanned light plane using optics of the type described in U.S. Pat. No. 4,645,348. Positioned within cabinet 52 adjacent the imaging window is a base leg mirror 64. The mirror is positioned so that light entering through the imaging window enters an anamorphic lens 66. The anamorphic lens has a first focal length along one axis and a different focal length along a second orthogonal axis. The anamorphic lens thus produces expanded resolution in one plane and compressed resolution in another plane. This gives one magnification along the axis orthogonal to the length of the contour line and different magnification along the axis parallel to the length of the contour line. By positioning the anamorphic lens properly, the plane of greater focal length and thus higher magnification is aligned generally perpendicular to the length of the imaged contour line. Positioned behind the anamorphic lens is an imaging lens 68 which projects through an interference filter 70 into the video camera assembly 72. Also housed within cabinet 52 are the interface electronics 74 which couple between the video camera assembly and the digital computer equipment yet to be discussed. The above-described optical arrangement provides a suitable field in both the y and z directions, while maintaining sufficient resolution to compensate for the wide variation in vehicle track, wheel size and tire section.

Patent Number: 4,745,469
Date of Patent: May 17, 1988

RELEVANT PATENT DOCUMENTS
A/196 Pat. Rep. of Germany ... 156/111
OTHER PUBLICATIONS

of the First International Video Conference on Graphics Washington, D.C. Oct. 30-Nov. 1, Application of Computer Vision to a Highway Traffic J. T. Owsen et al. pp. 526-533.

inventor—Edward W. Stearn
att. to Pat.—Harold, Hickey & Paine

ABSTRACT

Images project formed on structured light while the wheel is rotated, is continuous as some lines on the surface of the tire. The images are read by video camera, processed, the optical plane of the structured light is selected to determine the specific geometry of lines. Analytically expansion points are search contour line by an algorithm which allows of any rotated images on the tire. The output of the video camera and processing, data is performed by parallel processing, the system is controlled by sequence circuit.

87 Claims, 13 Drawing Sheets



Details Text Image HTML KWIC

82 US 4827436 A

83 US 4820911 A

84 US 4745469 A

85 US 4705401 A

US-PAT-NO: 4820911

DOCUMENT-IDENTIFIER: US 4820911 A

TITLE: Apparatus for scanning and reading bar codes

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US Patent No. - PN (1):
4820911**Detailed Description Text - DETX (10):**

It will, therefore, be seen that an essentially circular beam ex anamorphic optics thereby avoiding the problems involved in the oblong beam ahead of the deflector 22. The use of the anamorphic avoids diffraction effects which reduce the resolution of the sc

Details Text Image HTML KWIC

81 US 4897688 A

82 US 4827436 A

83 US 4820911 A

84 US 4745469 A

United States Patent

Arachalim et al.

Patent Number: 4,820,911

Date of Patent: Apr. 11, 1989

[56] APPARATUS FOR SCANNING AND
READING BAR CODES[57] Invention: Robert Arachalim, Rochester, John
A. Babin, Phoenix, Jay M. Thomas,
Pittsford, all of N.Y.[58] Assignee: Photographic Sciences Corporation,
Rochester, N.Y.

[59] Appl. No.: 884,589

[60] Filed: Oct. 11, 1988

[61] Int. Cl. 2: G06K 001/00

[62] U.S. Cl.: 358/402, 358/403, 358/404, 358/405, 358/406, 358/407, 358/408, 358/409, 358/410, 358/411, 358/412, 358/413, 358/414, 358/415, 358/416, 358/417, 358/418, 358/419, 358/420, 358/421, 358/422, 358/423, 358/424, 358/425, 358/426, 358/427, 358/428, 358/429, 358/430, 358/431, 358/432, 358/433, 358/434, 358/435, 358/436, 358/437, 358/438, 358/439, 358/440, 358/441, 358/442, 358/443, 358/444, 358/445, 358/446, 358/447, 358/448, 358/449, 358/450, 358/451, 358/452, 358/453, 358/454, 358/455, 358/456, 358/457, 358/458, 358/459, 358/460, 358/461, 358/462, 358/463, 358/464, 358/465, 358/466, 358/467, 358/468, 358/469, 358/470, 358/471, 358/472, 358/473, 358/474, 358/475, 358/476, 358/477, 358/478, 358/479, 358/480, 358/481, 358/482, 358/483, 358/484, 358/485, 358/486, 358/487, 358/488, 358/489, 358/490, 358/491, 358/492, 358/493, 358/494, 358/495, 358/496, 358/497, 358/498, 358/499, 358/500, 358/501, 358/502, 358/503, 358/504, 358/505, 358/506, 358/507, 358/508, 358/509, 358/510, 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62 US 5491346 A

FIG. 3

TITLE: Anamorphic lens system for a hand-held symbology reader

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A portable symbology reader utilizing an anamorphic lens system. The anamorphic lens system allows a low cost, high volume CCD sensor to be used in a hand-held, point and shoot, portable imaging system. The anamorphic lens system provides vertical sensor resolution equal to the horizontal while providing a maximum field of view.

More specifically described, the present invention provides a symbology reader for detecting a coded symbol on an object, the coded symbol requiring at least a first predetermined object resolution along a vertical plane. The reader includes a two-dimensional array CCD sensor, the CCD sensor defining a

Details Text Image HTML KWIC

60	US 5570232 A	
61	US 5528704 A	
62	US 5491346 A	
63	US 5440111 A	

Each ray must be traced as parallel, radial, or axial through an optical system (the optical lens), a certain object resolution defined by the sensor resolution, the lens characteristics, and the distance of the object from the camera lens. The main error arises then is a given resolution as a particular object resolution is then determined by multiplying the number of pixels (on the CCD) in the direction by the object resolution in that direction (assuming the optical lens fills the entire CCD).

Typically, a monitor produces an interlaced video signal having two separate fields. Each field consists of alternating two row scanning, with the rows of pixels in each field aligned to the horizontal direction. Therefore, when viewing the CDDs in terms of screen resolution, each field can be considered to be composed by more than 1000

2
the. The fields typically have an exposure time
which effectively provides a complete new set
of data every six months (the standard La
tency).

show that for a point and short application, as the order of the second are modified in country (age) training for reliable becoming in a synchrology and, hence, in the same frame of the time it takes a commoner OGD to replace one to work back, only one field of the same field to be captured when the cluster is opened. This not the vertical, linear membership of the OGD, this field of state, making up every other to a state.

[illegible]

water depths shall 100 feet per foot (20% of 100 ft) both the vertical and horizontal distance for successful diving. As described above, the nature of the hazard is when the floating debris, small and vertical, undercuts objects like a boat or structure. Thus, the horizontal effect associated with the vertical effect is the boat or structure being 100 feet vertical distance from the vertical object undercuts first, and then the boat or vertical object and horizontal distance provided by the typical encounter CCR is cut through from the surface can be calculated as being twenty percent of a CCR undercuts first into of horizontal to vertical of 1/4:

net loss -27 price:7.30 dpm:4.67 income
object:realization:15 price:7.30 dpm:4.67
losses of traditional paper are in growing
for industry standards, even if a new price and
also accuracy and this the the only perfectly
step. If a considerable border is allowed account
man paper and short to increase, the horizontal
could also be expanded over there. In
between inner margins of 20% and over 20%

any is between the horizontal object size to be seen and the scanning power which defines the vertical size and therefore defines the horizontal and vertical sizes. These constants are very expensive and currently available in prototype form. There is a need for a system which can adapt a typical commercial microcomputer to the needed horizontal and vertical sizes to the discrepancies between horizontal and vertical resolution.

ELUCIDARY OF THE DONATION

The process invention solves the above problems by specifying an automatic loop system for use in a part-to-part

US-PAT-NO: 5579064

DOCUMENT-IDENTIFIER: US 5579064 A

TITLE: Compact anamorphic motion picture system

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Claims Text - CLTX (3):

said step of processing includes using an anamorphic lens to vertically compressed anamorphic release print film frame image film images on release print film, wherein said anamorphic release print film frame images each have a larger aspect ratio than said anamorphic frame images and with said release print film frame images each substantially all areas of said camera images, so the percent of expansion required during projection to project a geometrically of the scene, is reduced, and wherein said release print film has resolution than said originating camera film.

Claims Text - CLTX (11):

Details Text Image HTML KWIC

57 US 5581413 A

58 US 5579445 A

59 US 5579064 A

60 US 5570232 A



United States Patent
 Victor

Patent Number: 5,579,064
 Date of Patent: Nov. 26, 1996

(4) COMPACT ANAMORPHIC MOTION PICTURE SYSTEM
 (7) INVENTOR: Richard W. Wink, 11001 Camino de
 Ventura, Pacific Palisades, Calif. 90272

(21) App. No.: 08/273
 (22) Filed: Sep. 15, 1995

Related U.S. Application Data

(30) Continuation-in-part of Ser. No. 08/205, Mar. 21, 1994,
 which is a continuation-in-part of Ser. No. 07/638, Dec. 12,
 1991, abandoned.
 (31) Int. Cl.⁶ G03B 19/14; G03B 11/01
 (32) U.S. Cl. 359.04; 359.05; 359.06; 359.07
 (33) Filed of Ser. No. 11/218, 42, 44, 312/95

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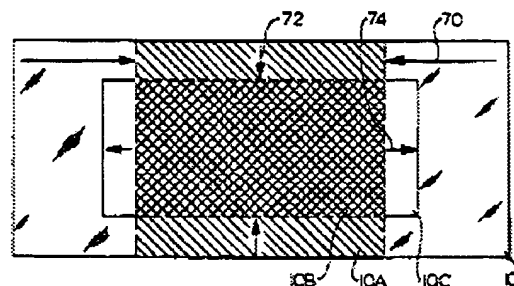
ANIMATED DRAWINGS—MICHAEL L. GILBERT
 ANIMATED DRAWINGS—MICHAEL L. GILBERT

ABSTRACT

A method is described for producing anamorphic motion picture images that have a large aspect ratio (4:3, 1.33 to 1), which enables high quality projection using a standard projection screen, which produces a standard projection image, and which increases the size of the release print which is being projected. A frame is projected, in the prior art, which is an anamorphic image to produce 50% horizontally compressed anamorphic images. The frame image (typical ratio of about 1.33 to 1). During projection to produce a release print, another anamorphic lens is used to produce 50% vertically compressed anamorphic release print film frame images (aspect ratio of 1.33 to 1) of the source film images. An anamorphic projection lens is used to a motion picture theatre to horizontally expand the projected images by about 50% to the aspect ratio of 1.33 to 1. The film that the anamorphic projection lens horizontally expands the image by only 25%, instead of the 50% of the prior art, enables the projection of extremely sharp and undistorted images on a screen using a standard projection screen. The fact that the release print images have been vertically compressed results in their convenient use in current projection, in the use of 16mm film for each release print for a longer duration of use for each release print, and in a smaller image. Each release print film frame image 2.5 perforance frame of 4, which results in a standard projection image.

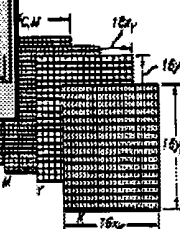
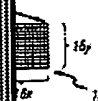
Primary Examiner—Michael L. Gilbert

5 Claims, 3 Drawing Sheets



value is automatically selected when the number of output pixels is more than twice the number of input pixels. The sharpening-factor value, ideally two, is multiplied by the deviation of each image element, e. g. pixel, from the average of its adjacent neighbors; this product is added to the level of the subject image element to form an adjusted level. Weighting or selection of neighbor values along particular axes allows for anisotropic resolution or anamorphic scaling.

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Details Text Image HTML KWIC

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US-PAT-NO: 5936755

DOCUMENT-IDENTIFIER: US 5936755 A

See image for Certificate of Correction

TITLE: Multi-beam scanning apparatus

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Brief Summary Text - BSTX (7):

In the multi-beam scanning apparatus disclosed in Japanese Application No. 58-68016, resolution is switched by providing a change the advance direction of the luminous flux in an optical laser beams are overlaid, and changing the beam spacing in a scan on a scanned surface via said components. In the multi-beam scanning apparatus disclosed in Japanese Laid-Open Patent Application No. 57-549, resolution is switched by providing an afocal anamorphic zoom lens system forming magnification in a subscan direction, and changing the beam spacing in a subscan direction on a scanned surface via said zoom lens system.

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41 US 5818645 A

U.S. Patent

Aug. 10, 1999

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FIG. 8(A)

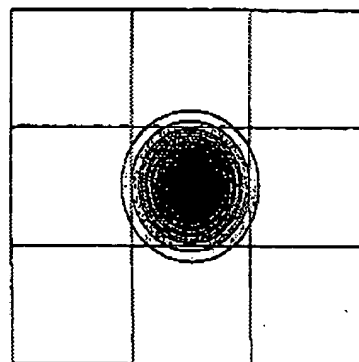
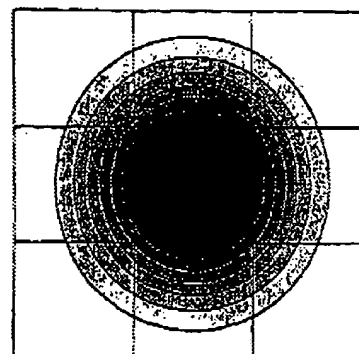


FIG. 8(B)



US-PAT-NO: 6181482

DOCUMENT-IDENTIFIER: US 6181482 B1

TITLE: Variable ratio anamorphic lens

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Brief Summary Text - BSTX (11):

The use of anamorphic optics to provide a variety of display aspect ratios is particularly beneficial for systems based on emerging digital display technologies because all available resolution of the recording and display media can be utilized. Further, some digital media use ratios other than academy ratio. For example, media with a 1280 by 1024 element resolution has a ratio of 1.25. Without anamorphic optics, a 4:3 ratio image could use only 963 elements vertically, while a 1.85:1 flat widescreen image would use only 692 vertical elements. By using anamorphic optics with an anamorphic ratio of about 1.07:1, a 4:3 ratio image can utilize the full 1024 element vertical resolution.

Details Text Image HTML KWIC

30 US 6243156 B1

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compliance horizontally this vertically to produce the appropriate display aspect ratio. It should be noted that, while it is convenient to speak in terms of compressing when recording and expanding when reproducing along one axis, the same result can be achieved by compressing when recording along one axis and compressing when reproducing along the perpendicular axis. It is thus possible to use expansion in both processes rather than compression. Thus, the recording and/or often have a two-fold anamorphic ratio to the reproducing lens with the anamorphic effect of both applied three-fold's ratio ratio or both lenses can have the same anamorphic ratio applied along perpendicular axes. Anamorphic systems produce presentations of a high quality, but the geometry for the anamorphic anamorphic

FIG. 4 shows a schematic view of a camera or projector for the lens attachment of the present invention, given a perspective view of the lens elements in front of the present invention. FIG. 4 shows a plan view of the lens elements of a various positions for the movable lens group. FIG. 4 shows a perspective view of the lens elements in another embodiment of the present invention. FIG. 4 shows a plan view of the lens elements of FIG. 4 with various positions for the movable lens group. FIG. 4 shows the relationship between the position of the movable lens group and the anamorphic ratio. FIG. 4A-4C show plan views of the NTP for the lens attachment with various positions for the movable lens group and movable lens element. FIG. 4A-4C show plan views of the NTP for the lens attachment shown in FIG. 4A-4C.

US-PAT-NO: 6549215**DOCUMENT-IDENTIFIER:** US 6549215 B2**TITLE:** System and method for displaying images using video

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Detailed Description Text - DETX (56):

Referring now to FIG. 19, foveal and anamorphic video are combined in a single image. The low and high resolution images are combined as described above. The high resolution image is in region 452 using foveal video and also at a 1.times. scale in both the horizontal and vertical dimensions, using anamorphic video. To combine this high resolution image with the low resolution regions 454, 456 in the horizontal dimension, the edges 458, 460 of the high resolution region are displayed at same scale as the high resolution region 452. The low resolution image information between the edges 458, 460 is displayed at same scale as the high resolution region 452. The information in the low resolution regions 464, 466 that is outside the high resolution region 452 is displayed using either abrupt or graduated anamorphic video.

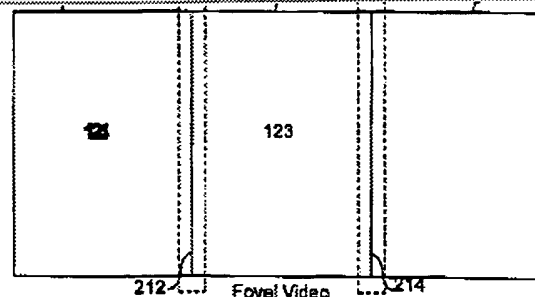
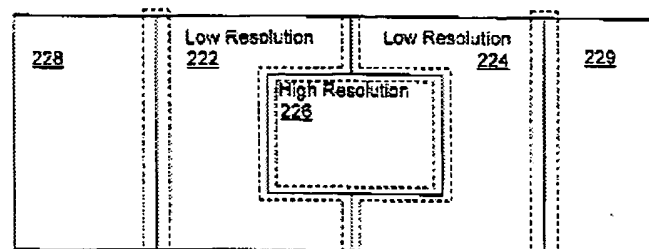
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**FIG. 8A****FIG. 8B**